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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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507TH MEETING

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

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WEDNESDAY, NOVEMBER 5, 2003

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ROCKVILLE, MARYLAND

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The Advisory Committee met at 10:30 a.m.
at the Nuclear Regulatory Commission, Two White Flint
North, Room T2B3, 11545 Rockville Pike, Dr. Mario V.
Bonaca, Chairman, presiding.

COMMITTEE MEMBERS:

MARIO V. BONACA	Chairman
GRAHAM B. WALLIS	Vice-Chairman
STEPHEN L. ROSEN	Member-at-Large
F. PETER FORD	Member
GEORGE E. APOSTOLAKIS	Member
THOMAS S. KRESS	Member
GRAHAM M. LEITCH	Member
VICTOR H. RANSOM	Member
WILLIAM J. SHACK	Member
JOHN D. SIEBER	Member

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1 ACRS STAFF PRESENT :

2 MARVIN D. SYKES

3 JOHN T. LARKINS Executive Director-ACRS/ACNW

4 SHER BAHADUR Associate Director-ACRS/ACNW

5 HOWARD J. LARSON Special Assistant-ACRS/ACNW

6 SAM DURAISWAMY Technical Assistant-ACRS/ACNW

7

8 PRESENTERS :

9 SATISH AGGARWAL NRR

10 AMRITPAL GILL

11

12 NRC STAFF PRESENT :

13 SHERRY A. MEADOR

14 SAMUEL HERNANDEZ

15 NILESH C. CHOKSHI

16 JIENDRA VORA

17 ALLEN HISER

18

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I-N-D-E-X

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representatives of the NRC staff	
regarding the draft final Revision 3	
to Regulatory Guide 1.32 which endorses	
IEEE Standard 308-2001, "Criteria for	
Class 1E Power Systems for Nuclear	
Generating Systems"	

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P-R-O-C-E-E-D-I-N-G-S

(10:27 a.m.)

1) OPENING REMARKS BY THE ACRS CHAIRMAN

1.1) OPENING STATEMENT

CHAIRMAN BONACA: Good morning. The meeting will now come to order. This is the first day of the 507th meeting of the Advisory Committee on Reactor Safeguards.

During today's meeting, the committee will consider the following: draft final Regulatory Guide 1.32, Revision 3, "Criteria for Power Systems for Nuclear Plants"; safeguards and security matters. This meeting will be closed between 1:30 and 7:00 p.m. to discuss safeguards and security matters.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. Dr. John Larkins is the designated federal official for the initial portion of the meeting.

We have received no written comments or requests for time to make oral statements from members of the public regarding today's sessions. A transcript of portions of the meeting is being kept. It is requested that the speakers use one of the microphones, identify themselves, and speak with

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1 sufficient clarity and volume so that they can be
2 readily heard.

3 1.2) ITEMS OF CURRENT INTEREST

4 CHAIRMAN BONACA: Before we move on to the
5 first item on our agenda, I would like to point out
6 that between 11:30, when this meeting is supposed to
7 recess, and 1:30, you are not going to have a long
8 lunch. What is going to happen is that I would like
9 you to get some lunch with you, come back here at
10 12:15, if you could, and help me discuss the issue of
11 stabilizing the PRA quality expectations and
12 requirements. Then at 12:45, we are having Gary
13 Hollahan come in and share some of the thoughts and
14 give him some of the views of the committee on that
15 issue that you know of. I sent out a request about 10
16 days ago for discussion and review.

17 The pressure for this timing is already
18 coming from the means of the commission. So I would
19 like to ask you to be patient with that and come back
20 here at 12:15 and be ready to discuss that issue.

21 So with that, let's move on to the first
22 item on the agenda, which is the final draft final
23 Regulatory Guide 1.32. John Sieber is going to take
24 us through that presentation.

25 MEMBER SIEBER: Thank you, Mr. Chairman.

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1 2) DRAFT FINAL REGULATORY GUIDE 1.32, REVISION 3,
2 "CRITERIA FOR POWER SYSTEMS FOR NUCLEAR PLANTS"

3 2.1) REMARKS BY THE SUBCOMMITTEE CHAIRMAN

4 MEMBER SIEBER: Reg Guide 1.32 relates to
5 power systems and endorses IEEE standard 308. If you
6 research standard 308, the original version was
7 published in 1970. And there have been six revisions
8 to it, last of which was published in 2001 and was
9 basically an update and brought in things like
10 verification and validation, which we discussed at our
11 last meeting.

12 Standard 308-2001 specifically
13 incorporates five other IEEE standards. And these are
14 incorporated in the body of the text of the standard.
15 It also references 11 additional IEEE standards. Now,
16 the ones that are referenced are not required under
17 the reg guide if they're referenced in the back, but
18 if they're referenced in the text of the standard,
19 they are.

20 So, with that little bit of introduction,
21 I have gone through all of these standards and the reg
22 guide and the comments. And so I think that we are
23 now prepared for the staff's presentation. So, with
24 that, Satish Aggarwal, you can begin your
25 presentation.

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1 MR. AGGARWAL: Thank you, John.

2 2.2) BRIEFING BY AND DISCUSSIONS WITH

3 REPRESENTATIVES OF THE NRC STAFF

4 MR. AGGARWAL: Mr. Chairman, this is
5 revision 3 to regulatory guide 1.32, vital criteria
6 for power systems for nuclear power plants. The
7 purpose of this meeting is to seek your concurrence of
8 the staff position. And we will be looking forward to
9 receiving a letter accordingly.

10 As I pointed out in my last appearance
11 here, there are many, many reg guides in the
12 electrical area which are outdated because they
13 endorse the standards that date somewhere between 1970
14 and onward. The staff is making a sincere attempt to
15 update these reg guides as fast as possible.

16 Before today, before you, this is a
17 standard 308 with the original reg guide that was
18 issued in 1977. Revision 2 of the reg guide endorses
19 the IEEE standard 308-1974, which is, of course,
20 outdated.

21 The staff issued a draft Regulatory Guide
22 DZ1-079 in May 2003 for public comment. This draft
23 guide endorses the IEEE standard 308-2001, as John
24 pointed out earlier.

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1 The comment period expired on July 31st,
2 2003. And we received only one comment letter. That
3 comment letter was attached. The memo, which was sent
4 to John Larkins, you have a copy of it.

5 As you will notice, the comment letter,
6 the comments were editorial, they were minor, and they
7 were incorporated. So as far as the public is
8 concerned, there are no comments, period.

9 Let me just take you and run by you, what
10 are we talking about today and what is the purpose of
11 power systems. As the title tells you, the major role
12 is simply to provide electric power to the reactor
13 trip system, engineering safety features, and
14 auxiliary supporting features.

15 This is a very unique safety system that
16 extends towards the plant and also the supporting
17 system. And I will briefly take a few minutes to talk
18 to you about the scope and tell you what really does
19 it cover.

20 This guide applies to AC power systems, DC
21 power systems, and instrumentation and control power
22 systems. Let me take, as I said earlier, a few
23 minutes to walk through and let you understand what
24 does it really cover.

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1 If you are talking about equipment, we
2 will cover switch gear, table. That's a charger.
3 These are simply examples I just want to give to you.

4 If you are looking at components, we are
5 looking at transformers, the level for 41-60 level, as
6 the case may be, when we talk about sources, we will
7 be looking for standby generators. All are part of
8 the power system.

9 Well, let's talk about actuation devices.
10 And if we are talking about actuation devices, we will
11 be looking at cycle breakers, controllers, control
12 relays, and switching. And if we look at the
13 actuation equipment, we will be looking at motors,
14 heaters.

15 And now if we looked at the
16 instrumentation control and electrical protection, of
17 course, we will be looking for current transformers,
18 voltage transformers, microprocessors, protective
19 relays. They are all part of the power systems.

20 MEMBER LEITCH: So in the case of the
21 diesels, this standard would include the diesel
22 generator but not the engine?

23 MR. AGGARWAL: That's right.

24 MEMBER LEITCH: What about the main unit
25 generators? Are they covered by this?

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1 MR. AGGARWAL: No sir.

2 MEMBER LEITCH: Okay. Thank you.

3 MR. AGGARWAL: So essentially now comes
4 what is the principal designed criteria. Well, as
5 usual, under a DBE, the former will not happen. You
6 cannot lose electric power to a number of engineering
7 safety features, surveillance devices, or protection
8 system devices. So that required safety functions
9 cannot be performed, as simple as that.

10 Then you will flip a switch. You expect
11 the light to be there. Similarly, all electric power
12 systems are required to ensure that the power is
13 always available. And you ought to know a loss of
14 electric power to any equipment will result in a
15 reactor transient. That is capable of causing
16 significant damage to the reactor coolant pressure
17 boundary or to fuel flooding.

18 MEMBER LEITCH: So if that were a
19 transient there, it is more severe than might be
20 normally understood? For example, I might think of a
21 reactor scram as a reactor transient, but it's not
22 included in that definition?

23 MR. AGGARWAL: Well, the definition is not
24 there. All it is saying is that, hey, you do not want
25 to see a loss of power to any given system under a

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1 design basis even. One redundant train or the
2 division must always be available to perform a safety
3 function. So this is all we are saying. And that is
4 an event in the basic design.

5 If you have a coal spray pump, for
6 example, in a nuclear power plant, and two of them are
7 and one of them is assigned to express, we are saying,
8 hey, one will always be available. So that is a
9 principal design criteria. This is what we want to
10 ensure.

11 MEMBER LEITCH: My only question is the
12 word "transient." What you really mean there is it is
13 a damaging event, right?

14 MR. AGGARWAL: That is right. All we are
15 saying, if you have loss of power for both buses, you
16 have a problem. It could be a reactor scram. It
17 could be a transient. And it could be give you safety
18 function. It's as simple as that.

19 Paul Gill is here from NRR. He was a
20 member of the working group who wrote the standard.

21 Let us walk through what the IEEE for 2001
22 provides. It provides a principal design criteria,
23 which I outline. It provides requirement for the test
24 and surveillance.

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1 What really the standard is telling is
2 what kind of a pre-op original equipment test and
3 inspection you will be performing, the standard for
4 our guidance for pre-operational system test, which
5 must also be performed.

6 And with regard to the surveillance, the
7 operational status information must be provided for
8 the power system inside the control room or outside at
9 all times. This can be done by continuously
10 monitoring or by PRA test, either option. The bottom
11 line is the CRO should be aware what is happening at
12 any time to an E-1 system.

13 Does this standard also provide guidance
14 for sharing safety-related power systems in multi-unit
15 stations? Let me pause here for a moment and bring to
16 your attention that this reg guide as presented to you
17 endorses 308-2001 with a minor exception. And that
18 exception is where you have a regulatory guide 1.81 on
19 sharing shutdown in electric system from multi-unit
20 nuclear power plants.

21 What this guide states is that you shall
22 not share DC systems. Now, as you know, this is a
23 very old guide. In those days, you used to use the
24 word "share," which, as you know, we don't use that
25 any more in reg guides. But this is the way it is.

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1 The standard is saying that you can share
2 systems as long as you can technically justify it.
3 The staff position is to maintain the old position,
4 namely you shall not share DC systems in a multi-unit
5 station. I just want to bring it to your attention so
6 you know.

7 Now, the standards also provide the
8 requirement for documentation, verification, and
9 validation. We did talk about this in earlier
10 meetings.

11 MEMBER SIEBER: In this event, V&V only
12 applies to digital systems. For example, there --

13 MR. AGGARWAL: Essentially.

14 MEMBER SIEBER: There are a lot of digital
15 devices that are now used as protection devices,
16 timing relays, and so forth, which have a program.
17 And V&V would be applied to that.

18 MR. AGGARWAL: That is correct. At the
19 point of information to the committee, the staff will
20 be coming soon, hopefully early next year, a standard
21 which is on computer, use of computer and safety
22 systems. We are trying to deal with ahead of IEEE
23 2003. It is still under print.

24 And the staff has already prepared a reg
25 guide endorsing that. And the goal is that the moment

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1 the standards are available, they are here. And that
2 will again cover V&V, specifically the digital
3 equipment.

4 I would also like to bring to your
5 attention now what are the significant changes in
6 1974. Some of them which you, John, highlighted, but
7 let me very briefly walk through. You see, when we
8 were writing the standard in the 1974, our experience
9 was very limited in nuclear power plants.

10 We really didn't know what we were really
11 doing. And the information was sketchy but was still
12 defensible. Over 30 years, we have learned that. And
13 we are trying to provide an up-to-date status on the
14 state-of-the-art of the technology.

15 So we have clearly now defined what is our
16 design basis for safety-related power systems are. In
17 my last meeting with you, I talked to you about
18 single-failure criteria quite at length, the
19 application.

20 And, again, the same criteria applies to
21 the power systems. Then the basic issue some of you
22 may be aware of is that in this state, there are
23 concerns that the utility put a lot of
24 non-safety-related load on safety-related buses. It

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1 is a normal practice. And economics drives that kind
2 of a practice.

3 So it was imperative that a standard come
4 out and tell, "Hey, when you do so, what we would like
5 you, when you would like the load to be disconnected."
6 And that guidance is included in 2001.

7 Independent of the safety-related power
8 system, this is another issue where, again, at the
9 point of information to the committee, the staff will
10 be coming soon. As a matter of fact, you already have
11 seen the draft guide, Reg Guide 1.75, on independence
12 criteria. We know the status is trying to be more
13 realistic in terms of those distances. So this
14 standard provides that guidance also.

15 One of the other things we did was provide
16 some guidance for the circuits that penetrate
17 containment. Let me briefly explain to you what I
18 meant by that, the idea being that the failure of any
19 circuit, whether AC/DC, doesn't matter, any circuit,
20 shall not result in exceeding the current versus
21 capability of penetration for concentration for that
22 circuit, essentially saying that, hey, don't lose it
23 under any circumstances.

24 I briefly touched earlier when I talked
25 about pre-op testing of safety-related systems. Does

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1 the standard provide guidance? I also talked about a
2 total of other items, namely the multi-unit
3 consideration, and the surveillance requirements for
4 safety systems.

5 MEMBER LEITCH: As far as future reactors
6 go, might it be more clear to indicate whether you are
7 speaking about multi generators or multi reactors when
8 you say "multi-unit"? I'm not sure what you mean.

9 I could envision a time when there might
10 be two reactors, for example, in a modular situation,
11 two reactors driving one turbine. Is that one unit or
12 two?

13 MR. AGGARWAL: This IEEE standard is still
14 based on a current design.

15 MEMBER LEITCH: It's based on?

16 MR. AGGARWAL: Current design.

17 MEMBER LEITCH: Current design. And when
18 we talked about multi-unit, we simply meant more than
19 one BWR at one plant or more than one PWR.

20 MR. AGGARWAL: So it assumes that there is
21 one reactor driving one generator.

22 MEMBER LEITCH: That could be. That could
23 be. But I may also point out as a point of
24 information, I am now going to change my hat to IEEE.
25 We in IEEE are looking ten to 15 years ahead. We are

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1 looking at different designs, possible designs, which
2 may be used anywhere in the world.

3 What is behind it is that even though the
4 United States is not having a license in new plants,
5 many other countries are. And these standards are
6 used worldwide.

7 Besides, ten years from now, we will come
8 with a newer advanced reactor. Then the standards
9 should be up to date. So we are looking in the design
10 basis events on those designs and how and why and what
11 area we should revise this standard. That has already
12 taken place and will continue.

13 MEMBER SIEBER: It seems to me that the
14 mid-term reactors or transitional reactors like
15 AP1000, AP600, ESBWR, the concepts involved there were
16 considered by the staff in the development of this
17 standard.

18 MR. AGGARWAL: That's right.

19 MEMBER SIEBER: So, really, what you are
20 talking about for a new standard or another revised
21 standard goes beyond those intermediate concepts.

22 MR. AGGARWAL: We will create probably
23 more --

24 MEMBER LEITCH: There was a plant on the
25 drawing boards. It was never built. It had, I think

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1 it was, two reactors driving one turbine or maybe it
2 was the other way around. I forget which.

3 MR. AGGARWAL: Yes. Probably --

4 MEMBER LEITCH: It was never built, but it
5 had a construction permit, I think.

6 MR. AGGARWAL: Well, the focus in this
7 standard is not how to define multi-unit stations.
8 Focus is very simple in this standard. They are
9 talking about whether you share systems. I give you,
10 for example, some of you again may be familiar with
11 Hatch nuclear power plant at three diesel generators.
12 Okay? One is assigned to each unit.

13 MEMBER SIEBER: Right.

14 MR. AGGARWAL: And it can be shared by the
15 unit. So you need some kind of a requirement when
16 there is sharing involved. It's a simple example.
17 Does this standard provide that kind of criteria?
18 What do you do?

19 MEMBER SIEBER: Actually, the standard
20 focuses on the protection of a single reactor.

21 MR. AGGARWAL: Basically.

22 MEMBER SIEBER: And so the extent to which
23 all of the protection systems and electric power
24 systems apply to a single reactor, then if there is a
25 multi-unit site in the sharing restrictions, which

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1 aren't allowed for DC under reg guide 1.81, I think,
2 and to a limited extent for AC. So I think you could
3 fit it into a multi-reactor, multi-unit plant.

4 MR. AGGARWAL: That's right, John.

5 VICE-CHAIRMAN WALLIS: When you say "we"
6 all the time, you are talking about IEEE?

7 MR. AGGARWAL: I highlighted when I say I
8 am changing my hat.

9 VICE-CHAIRMAN WALLIS: Yes, but most of
10 the time you are talking about IEEE, and you still say
11 "we." Is that because the NRC has a significant
12 representation on the IEEE committee or something?

13 MR. AGGARWAL: That is correct.

14 VICE-CHAIRMAN WALLIS: All right.

15 MR. AGGARWAL: Just to clarify, our staff
16 is participating in the development of all nuclear
17 standards. In 1990, we did publish all the nuclear
18 standards applied to nuclear power plants. But, as
19 you know, we are no longer in the paper world. They
20 are electronic. So we are not going to publish any
21 more of this kind of compilation. The standards are
22 available electronically.

23 Yes, the staff participates at the nuclear
24 power engineering committee. We participate at
25 different subcommittee levels. And the staff heavily

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1 participates in working group actually writing the
2 standards.

3 As an example, I pointed out Paul Gill is
4 from NRR, from the Electrical Branch. He was the
5 member of the working group who developed the
6 standards. And he is still there.

7 VICE-CHAIRMAN WALLIS: Is this the
8 shortest reg guide ever written?

9 MR. AGGARWAL: Yes, sir, because it's very
10 simple. You see, let me again point out one thing.
11 It may not appear to many people at the front side.
12 In all the reg guides if you go back, we take many,
13 many exceptions.

14 What the staff is doing is working hard
15 with the industry and let them understand where he is
16 coming from and see if we can sell our point of view.
17 Thereby, we do not take exceptions because those
18 requirements meet the regulations. And the added
19 advantage is that I don't have to come here and defend
20 the exceptions. So the staff addressed let's do it at
21 the IEEE level.

22 Now, 603 IEEE, this was a major part in
23 this standard that it should be consistent. I might
24 also point out that 603 is incorporated by reference
25 in our regulations.

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1 John pointed out earlier that many of
2 these standards, the criteria was provided for
3 interfacing with IEEE standards, which are cited here.
4 And, finally, I would like to point out two more
5 things, that the criteria for power quality, to
6 include potentially fact of harmonic distortion and
7 degraded grid conditions, were included.

8 Now let me talk to you about what harmonic
9 distortion really means. The variation of voltage,
10 frequency, and form, including the fact of harmonic
11 distortion, in any mode we have provided the guidance
12 in this standard.

13 What we are really saying, in nuclear
14 plants, power plant operation shall no degrade the
15 performance of any safety systems or load at any given
16 time. And this is essentially the criteria given
17 here.

18 We also provided how do you deal with
19 degraded grid conditions. And this takes you to
20 another IEEE standard, 741. Hopefully we get some
21 time available. We will also try to endorse that.

22 So essentially, Mr. Chairman, as pointed
23 out, the very simplistic or direct guide endorsing the
24 consensus standards, this will conclude my
25 presentation with the request that the staff is

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1 looking forward to receiving a letter of endorsement
2 from the ACRS. And I will be happy to answer any
3 other questions you might have or any other member
4 might have.

5 MEMBER SIEBER: I have --

6 MR. AGGARWAL: Yes, sir?

7 MEMBER SIEBER: -- an issue you may want
8 to think about. And it has to do with DC power
9 systems when they are used to power
10 microprocessor-based controls or protection devices.

11 The fact that a DC power system is sitting
12 on a battery with some capacity but as relays open and
13 close, you get lots of harmonic distortions, that's a
14 reflection on the bus itself, which has a tendency and
15 can trip microprocessor devices. I've seen a number
16 of examples.

17 Unfortunately, if you have the same
18 devices on every bus, all the buses fail to operate
19 properly.

20 MR. AGGARWAL: Sure.

21 MEMBER SIEBER: It changes through the
22 lifetime as relay contacts get dirty and reluctance
23 changes and so forth. So to me that is sort of a
24 serious problem which says you almost ought to be
25 looking at DC buses for harmonic distortion on a

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1 periodic basis because it changes through the life of
2 the plant.

3 I don't see that specifically in here, but
4 I think one could interpret that that is an issue.
5 And if you use the surge protection regulations or
6 standards, you can probably construe those to avoid
7 this situation. But it has occurred in plants. So I
8 would just mention that to me, it is an issue.

9 MR. AGGARWAL: Yes. John, you are right.
10 It is a concern. Particularly more and more
11 microprocessors --

12 MEMBER SIEBER: That's right.

13 MR. AGGARWAL: -- and these documents are
14 used in nuclear power plants. To me, that is implicit
15 in this standard but is not explicit.

16 MEMBER SIEBER: That's right.

17 MR. AGGARWAL: I totally agree with you.
18 And Paul will take this to the committee at the next
19 significant time.

20 MR. GILL: As a matter of fact, we have
21 talked about the impact of harmonics --

22 MEMBER SIEBER: Right.

23 MR. GILL: -- on DC and AC systems.

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1 MEMBER SIEBER: Yes. I think that the
2 committee should know I know a couple of people on it.
3 And I know that they know what I know.

4 MR. AGGARWAL: Yes. This is serious. I
5 mean, you talk about inter-power plant. I'm even
6 concerned at my home. I mean, I am not concerned with
7 the distortion there because there is no DC power.

8 MEMBER SIEBER: Right.

9 MR. AGGARWAL: But, hey, any kind of
10 distortion can knock out my motherboard on my
11 computer. So, you know, it is a fear. And when you
12 talk about nuclear power plants, DC systems, they can
13 bring havoc if they fail to perform.

14 CHAIRMAN BONACA: We had a question up
15 here from Steve.

16 MEMBER ROSEN: One question about your
17 expectations for this standard being adopted as an
18 ANSI standard.

19 MR. AGGARWAL: As a matter of policy, all
20 of the standards which are IEEE standards become ANSI
21 standards. And we work under that guidance.

22 I might also extend your question a little
23 further. IEEE is now looking on a broader view. And
24 we are looking as a whole. And we want to work
25 together with IEC to ensure that some of our

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1 standards, either they're published with a logo or we
2 at least move in that direction.

3 And that is staff because today if you
4 built a reactor in a foreign country, they keep asking
5 you, "Did you read ISO 9000?" and people in the U.S.
6 say, "What?" So we want to look into how we have a
7 happy marriage.

8 ANSI standard is a no, never mind
9 situation. All of the standards become ANSI
10 standards. But how will we get them adopted
11 throughout the world in conjunction with IEC? It's a
12 goal.

13 And, again, I'm speaking for IEEE and not
14 for the NRC staff.

15 MEMBER ROSEN: Okay.

16 MR. AGGARWAL: Thank you.

17 Any other questions?

18 MEMBER LEITCH: It's interesting to me
19 that over the past few days and I guess predicted for
20 the next couple of weeks, there is a discussion about
21 solar flares. Was there any consideration of that in
22 this standard? I know those activities --

23 MR. AGGARWAL: Not in this standard, but
24 this is one of the technical issues you know, evolving
25 issues, which you may want to look into. Remember a

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1 few years ago they talked magnetic disturbances
2 developing from some? This is again something very
3 new.

4 And as we progress in developing the
5 standards, we will give due consideration. And,
6 again, the workgroup is going to look into it.

7 MR. GILL: Well, in part, the standard
8 covers the safety systems. And they are in the
9 building.

10 MEMBER SIEBER: That's right.

11 MR. GILL: So they're not impacted as the
12 systems that are outside the building. So solar --

13 MEMBER LEITCH: I guess it's mainly been
14 a problem with high-voltage transmission systems.

15 MR. GILL: And transformers and equipment
16 and so on. So by the time that energy travels inside
17 the building, it's attenuated to the point that it's
18 not something that the working group is aware of.

19 So should we find any operating
20 experience, we will then duly take to consider that or
21 include it in the next revision. So every five years
22 as an IEEE body, we are going to revise 308.

23 MEMBER LEITCH: It seems to me there was
24 one plant that I guess felt were particularly
25 susceptible from a grid stability situation if they

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1 lost certain transmission lines and they reduced power
2 or maybe -- I don't think they took a unit off, but I
3 think they reduced power. As I recall, it was Salem
4 and Hope Creek in that complex there during a period
5 of solar flare activity they reduced power.

6 They have not done that this time to the
7 best of my knowledge. But I think one of the units is
8 off for refueling anyway. So it's an interesting
9 thing.

10 MR. AGGARWAL: Paul mentioned five and ten
11 years. That comes out of the ANSI. ANSI has told us
12 that they will not tolerate any standard 30 years old
13 or 25 years on the books. They're asking now that ten
14 years is a life standard and that during that time you
15 can revise earlier, but you must revise.

16 MEMBER LEITCH: Or reaffirm.

17 MR. AGGARWAL: Or reaffirm or do something
18 about it. Okay?

19 MEMBER LEITCH: Yes.

20 MR. AGGARWAL: Failing such a decision by
21 IEEE will no longer be an ANSI standard.

22 MEMBER SIEBER: Well, does anybody else
23 have any questions?

24 (No response.)

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1 MEMBER SIEBER: If not, I would like to
2 thank the staff very much for their work and their
3 presentation. And, Mr. Chairman, that's it.

4 CHAIRMAN BONACA: Thank you.

5 MR. AGGARWAL: Thank you very much.

6 CHAIRMAN BONACA: A good presentation.

7 MR. AGGARWAL: I think you will have a
8 little longer lunchtime now.

9 CHAIRMAN BONACA: Well, it will put us
10 back on our schedule. That's great. Thank you for
11 that. I think we will take a recess for lunch now.
12 And I think we will go off the record for the day. We
13 will start again tomorrow morning. And we meet again
14 here at 12:15 to exchange views on this document that
15 you have all received before Gary comes at 12:45.

16 (Whereupon, at 11:04 a.m., the foregoing
17 matter was recessed for lunch, to
18 reconvene at 12:15 p.m. the same day in
19 closed session.)

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